

# PATRIOT DB

## THE FAST AND AFFORDABLE Digital Tracker

### THE AFFORDABLE ANSWER

Patriot™ DB is the cost-effective solution for 6 Degree-of-Freedom (6DOF) tracking and 3D digitizing from Polhemus, the pioneer in 3D position/orientation measuring devices. A perfect answer for the position/orientation sensing requirements of 3D applications and environments where cost is a primary concern, it's ideal for head tracking, biomechanical analysis, computer graphics, cursor control, and stereotaxic localization.

### FEATURES

#### COST EFFECTIVE

Provides position/orientation data at a minimum cost

#### COMPACT

Fits in the drive bay of your PC

#### EASE OF USE

Install and operate in minutes

#### MULTIPLE OUTPUT FORMATS

Position in Cartesian coordinates (inches or centimeters); orientation in direction cosines, Euler angles, or quaternions

#### MULTIPLE SENSOR OPERATION

Permits measurement of up to two sensors with a single system. No additional electronic units are required

#### RELIABLE

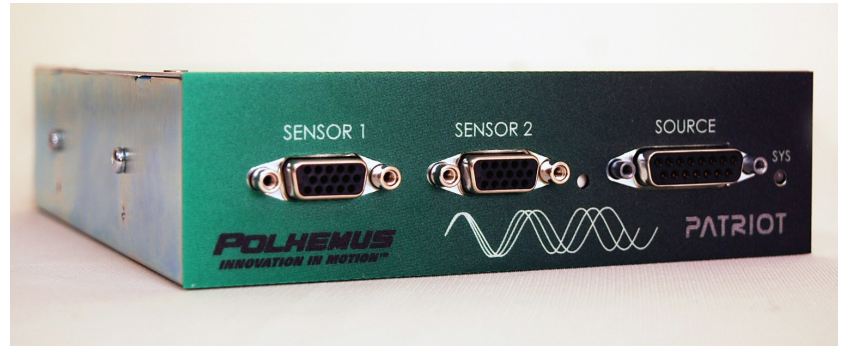
Factory calibrated, never needs adjustment

#### ANGULAR COVERAGE

The sensors are all-attitude

#### DRIFT-FREE

Solid state electronics



THE PATRIOT DB SYSTEM ELECTRONICS UNIT

### TWO SOLUTIONS IN ONE

The Patriot DB is a 3D digitizer and a dual sensor motion tracker, making it perfect for a wide array of applications requiring medium resolution, accuracy, and range. Computing the position and orientation of a small sensor as it moves through space, PATRIOT DB provides dynamic, real-time measurements of position (X, Y, and Z Cartesian coordinates) and orientation (azimuth, elevation, and roll).

### REAL-TIME MEASUREMENT

Measuring position and orientation in real time, Patriot DB can update data continuously, discretely (point by point), or incrementally. You can mount up to two sensors on heads or hands to capture real-time data for virtual reality or simulator applications. With the optional stylus, you can trace the outline of a physical object or collect polygon facets and get pinpoint accuracy of unlimited X, Y, and Z data points.

### A/C MAGNETICS

Quiet and stable, the system is essentially unaffected by facility power grids. Update rates are always maintained, as A/C magnetics offer the best signal-to-noise ratios and incorporate sophisticated digital signal processing capabilities. In addition, adaptive filtering is available as a standard feature.

## COMPONENTS

The PATRIOT DB system includes a System Electronics Unit (SEU), one sensor, and one source. You can expand the system's capabilities simply by adding an additional sensor.

## SYSTEM ELECTRONICS UNIT

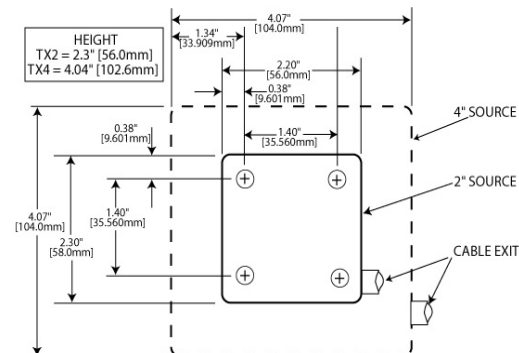
Contains the hardware and software necessary to generate and sense the magnetic fields, compute position and orientation, and interface with the host computer via a USB 2.0 interface.

(20.2 cm) L x (14.6cm) W x (4.1cm) H

Fits into 5.25" PC Drive Bay

## SOURCE

The source is the system's reference frame for sensor measurements.



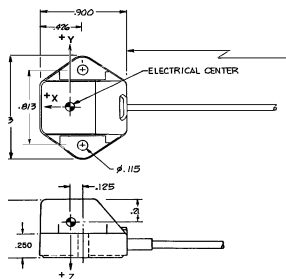
## WEIGHT

TX2: 8.8 oz. (250 gm) Thread size 1/4" x 20

TX4: 1.60 lbs. (726 gm) Thread size 1/4" x 20

## SENSOR

A lightweight, small cube, the sensor's position and orientation is precisely measured as it is moved.



## WEIGHT

0.32 oz. (9.1 gm)

**POLHEMUS**  
INNOVATION IN MOTION™

## POLHEMUS.COM

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## SPECIFICATIONS

### UPDATE RATE

60 Hz per sensor simultaneous sampling

### LATENCY

Less than 18.5 milliseconds

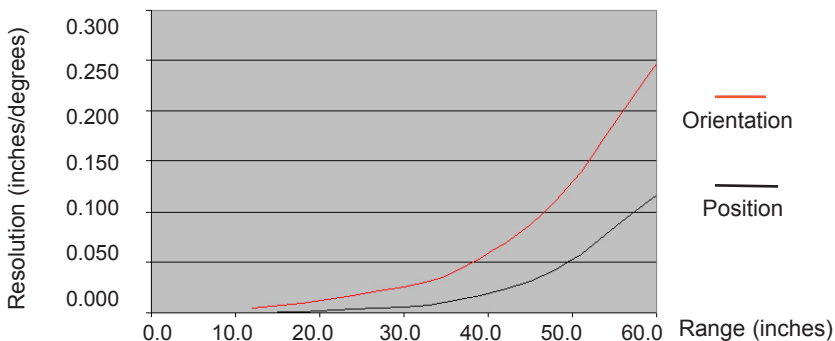
### STATIC ACCURACY

0.06 inch RMS for the X, Y, or Z position; 0.40° RMS for sensor orientation. The system will provide the specified performance in a non-metallic environment when the sensors are within 30 inches of the standard TX2 source (42 inches with the TX4 source). Operation at greater ranges will result in slightly degraded performance.

### INTERFACE

USB 2.0 (Back Panel) Cable Included

### RANGE VS. RESOLUTION



Range (inches)	Position Resolution (inches)	Orientation Resolution (degrees)
12.0	0.00046	0.0038
24.0	0.0035	0.0168
36.0	0.0113	0.0407
48.0	0.0428	0.1108
60.0	0.1175	0.2470

### DATA FORMAT

Operator selectable ASCII or IEEE 754 binary; English/Metric Units

### SOFTWARE TOOLS

PiMgr GUI for Microsoft Windows®

USB driver package for Microsoft Windows®

PDI SDK for Microsoft Windows®

Open-Source GUI for Linux®

### OPERATING TEMPERATURE

10°C to 40°C at a relative humidity of 10% to 95%, noncondensing

### POWER REQUIREMENTS

10W, 100-240 VAC, 50-60 Hz

PC power supply through rear panel connector

### REGULATORY

FCC Part 15, Class A

CE: EN61326-1: 1997/A1:1998/A2:2001/A3:2003 (Emission)

EN61326-1: 1997/A1:1998/A2:2001/A3:2003 (Immunity)

\*Large metallic objects, such as desks or cabinets, located near the source or sensor, may adversely affect the performance of the system.